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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,245	07/18/2006	Petrus Wilhelmus Kop	NL040054US1	8289

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EXAMINER

RALEIGH, DONALD L

ART UNIT	PAPER NUMBER
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2879

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/597,245	Applicant(s) KOP, PETRUS WILHELMUS	
	Examiner DONALD L. RALEIGH	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The Amendment, filed on March 24, 2009 has been entered and acknowledged by the Examiner.

Cancellation of claim 2 has been entered.

The addition of claim 7 has been entered.

Claims 1 and 3-7 are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 , 3-4 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by van der Voort (US Patent No. 6,144,152) in view of Trushell et al (US Patent No. 5,612,590).

Regarding Claim 1, van der Voort discloses a low-pressure mercury discharge lamp (Column 1, lines 6-7) comprising an envelope (Column 1, line 14 (bulb)) with an inner surface enclosing a discharge space (Column 1, line 9 (vessel)) in which a mercury comprising filling is accommodated (Column 1, line 10), at least one electrode (it must have an electrode to cause a discharge (Column 1, line 6) for generating

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ultraviolet radiation (Column 3, line 18 (280 nm)) in said discharge space, and a phosphor layer (Column 1, line 11 (luminescent)) formed over said inner surface to convert said ultraviolet radiation into light of the green wavelength region (Column 1, lines 12-13 (520 nm)), wherein said phosphor layer consists of a water-dispersible (a water dispensable phosphor is the ability to so perform and (BAM) is recognized to have such ability) blend of a yellow-green phosphor (Column 2, lines 57-58 (gadolinium activated and terbium activated cerium magnesium pentaborate (CBT). and a blue-green phosphor (Column 6, lines 40-42 (BAM) barium magnesium aluminate activated by Eu and Mn).

van der Voort fails to disclose providing a light output of 3600 lumens at an operation life of 100 h of the green wavelength region.

Trushell teaches a low-pressure mercury discharge lamp (Column 1, line 8) wherein said phosphor layer provides a light output of at least 3600 lumens at an operation life of 100 h, (Column 6, lines 1-5, 100 hours, 4483 lumens) to produce a high CRI fluorescent lamp (Column 3, lines 40-42). Furthermore, Column 6, line 2 (CBTM) indicates a Terbium activation which would produce a green color (See Ouwerkerk et al, US Patent No. 5,422,538 ; Column 4, lines 1-7).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the operation life and lumen output of the lamp of Trushell in the lamp of van der Voort, to produce a high CRI fluorescent lamp.

Regarding Claim 3, van der Voort discloses a low-pressure mercury discharge lamp (Column 1, lines 6-7) wherein said yellow-green phosphor is a Ce, Tb activated

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phosphor, gadolinium magnesium borate, activated by Ce, Tb (Column 2, lines 57-58 (CBT).and wherein said blue-green phosphor is a Eu, Mn activated phosphor, preferably barium magnesium aluminate, activated by Eu, Mn (Column 6, lines 40-42 (BAM), barium magnesium aluminate activated by Eu and Mn).

Regarding Claims 4 and 7, van der Voort fails to exemplify the low pressure mercury discharge lamp wherein the weight ration of yellow-green phosphor to blue-green phosphor is from 90:10 to 10:90. (75:25 to 50:50 in Claim 7).

Van der Voort discloses the claimed invention except for the weight ratio of the phosphors in the blend.

One of ordinary skill in the art, could reasonably contemplate such an optimization of the weight ratios as an obvious matter of design engineering.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the required blend ratios in the phosphor blend of van der Voort as an obvious matter of design engineering.

Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over van der Voort (152) in view of Konrad et al (US PG Pub. No. 2003/0061726).

Regarding Claim 5, van der Voort discloses the blue-green and yellow-green blend of phosphors and the low-pressure mercury discharge lamp having green emission (Column 1, line 13 (520-565 nm), but fails to disclose a process, comprising the application of a green-emitting phosphor layer on the inner surface of the envelope enclosing the discharge space of the lamp, wherein an aqueous suspension of a blend

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of phosphor, is deposited on the inner surface, followed by drying to obtain a coating on said inner surface.

Konrad teaches a process for the preparation of a low-pressure mercury discharge lamp (§ [0001], lines 6-7), comprising the application of a phosphor layer on the inner surface of the envelope (§ [0021], lines 3-5) enclosing the discharge space of the lamp, wherein an aqueous suspension of a phosphor (§ [0021], lines 3-6) is deposited on the inner surface, followed by drying to obtain a coating (§ [0021], line 2 and 8) on said inner surface to provide an improved method of drying without air bubbles and to improve thermal conduction of the coating (§ [0009], lines 17-18).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to incorporate the process, as taught by Konrad with phosphor blend of van der Voort to provide an improved method of drying without air bubbles and to improve thermal conduction of the coating.

Regarding Claim 6, van der Voort fails to exemplify a process wherein said phosphor blend consists of a Ce, Tb activated gadolinium magnesium borate and a Eu, Mn activated barium magnesium aluminate, in a proportion Of 87-50% b.w. of gadolinium magnesium borate, activated by Ce or Tb, to 13-50% b.w. of barium magnesium aluminate, activated by Eu and Mn". Van der Voort discloses the claimed invention except for the weight ratio of the phosphors in the blend.

One of ordinary skill in the art, could reasonably contemplate such an optimization of the weight ratios as an obvious matter of design engineering.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the required blend ratios in the phosphor blend of van der Voort as an obvious matter of design engineering.

Response to Arguments

Applicant's argument with respect to Claims 1 and 3 are not persuasive. Applicant argues that applicant's invention does not require the features disclosed by Voort to achieve a luminous flux of 3600 lumens. The phosphor of Claim 2 provided by Trushell (now incorporated in Claim 1) provides the claimed flux and lifetime and can be properly combined with the low pressure lamp of Voort.

Applicant's arguments with respect to Claims 4 and 6 are moot. Applicant's arguments are based solely upon their dependence on Claim 1 which now includes the incorporation of Claim 2. The dependence now of Claim 4 and 6 on the limitations of Claim 2 raises new issues that necessitate a new basis of rejection.

Applicant's arguments with respect to Claim 5 are persuasive. The Prior Art reference of Tews does not apply the phosphor to the lamp in an aqueous solution, as required. Therefore, the rejection of Claim 5 is withdrawn. However, a new basis of rejection is being made under Konrad et al (US PG Pub. No. 2003/0061726).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DONALD L. RALEIGH whose telephone number is (571)270-3407. The examiner can normally be reached on Monday-Friday 7:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter J Macchiarolo/
Primary Examiner, Art Unit 2879

/Donald L Raleigh/
Examiner, Art Unit 2879